

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No. 17

UNITED STATES PATENT AND TRADEMARK OFFICE

MAILED

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

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PAT. & T.M. OFFICE
BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte CHI HYUNG SONG

Appeal No. 2001-2277
Application No. 09/241,413¹

HEARD: DECEMBER 12, 2002

Before RUGGIERO, BARRY and SAADAT, Administrative Patent Judges.
SAADAT, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the Examiner's final rejection of claims 4, 24-27, 29 and 31. Claims 17-23 and 30 have been allowed. The Examiner has objected to claims 5-9, 11-16 and 28 and has indicated their allowability if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

¹ Application for patent filed February 2, 1999, which claims the foreign filing priority benefit under 35 U.S.C. § 119 of Korean Application No. 2940/1998, filed February 3, 1998.

We reverse.

BACKGROUND

Appellant's invention is directed to a device for converting video format in a digital television using vertical and horizontal format converting units. Each unit includes a control unit and a processing unit for obtaining the output video format (specification, page 7). The control unit provides a conversion equation for converting input format into output format and determines a conversion operation for converting the video signal into a desired format (id.). The processing unit includes numerator and denominator generating units for selecting and dividing the numerator of the conversion operation equation by a selected denominator and obtaining a converted signal (specification, page 10).

Representative independent claims 24, 29 and 31 are reproduced below:

24. A device for converting a video format, comprising:

a controller determining a conversion equation to convert a video signal into a desired format base on a conversion mode, the conversion equation have a numerator portion and a denominator portion, and outputting control signals based on the determined conversion equation;

a numerator generating unit receiving at least one of a present video signal and a previous video signal,

configuring to calculate the numerator portion of the conversion equation in response to the control signals, and calculating the numerator portion using the received at least one of present and previous signals; and

a denominator generating unit receiving output of the numerator generating unit, configuring to divide the output of the numerator generating unit by the denominator portion to obtain output video signal of the desired format.

29. A device for converting a video format, comprising:

a vertical format converting unit receiving a video signal and determining a converting mode, and including,

a first operation unit for being configured to perform an arithmetic operation, and

a first control unit determining a vertical conversion operation to convert the video signal into a desired vertical format based on the determined converting mode, and configuring the operation unit to perform the vertical conversion operation; and

a horizontal format converting unit receiving output of the vertical format converting unit, and including,

a second operation unit for being configured to perform an arithmetic operation, and

a second control unit determining a horizontal conversion operation to convert the output of the vertical format converting unit into a desired horizontal format based on the determined converting mode, and configuring the operation unit to perform the horizontal conversion operation.

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31. A device for converting a video format,
comprising:

a controller determining an input video format,
determining a desired output video format and determining a
conversion equation from the determined input video format
and the determined desired output video format; and

a processing unit converting input video signals from
the determined input video format to the determined desired
output video format using the conversion equation.

The Examiner relies on the following reference in rejecting
the claims:

Donovan	5,914,753	Jun. 22, 1999
		(filed Nov. 8, 1996)

Claims 4, 24-27, 29 and 31 stand rejected under 35 U.S.C.
§ 102(e) as being anticipated by Donovan.²

Rather than reiterate the viewpoints of the Examiner and
Appellant, we make reference to the answer (Paper No. 13, mailed
April 19, 2001) for the Examiner's complete reasoning in support
of the rejection and to the appeal brief (Paper No. 12, filed
February 15, 2001) for Appellant's arguments thereagainst.

² The 35 U.S.C. § 112 rejection of claims 8, 9, 15 and 16, as indicated
in the final rejection (Paper No. 7, mailed August 18, 2000) was overcome by
Appellant's amendment to claims 8 and 15 (Paper No. 9, filed November 20,
2000). In an Advisory Action (Paper No. 10, mailed December 1, 2000), the
Examiner indicated that the amendment would be entered upon filing a Notice of
Appeal.

OPINION

With respect to the rejection of claim 31, Appellant points out that the scan rate converter 206 of Donovan receives a selected mode from the SRC controller 208 and converts the input signal based on the parameters obtained from a lookup table (brief, page 5). Appellant further asserts that in such conversion, neither the controller nor the scan rate converter determines a conversion equation from the input and the desired output formats (id.). Referring to the user selection and determination of a parameter using the lookup table of Donovan (col. 9, lines 11-22), Appellant argues that a lookup table is used since the user knows the input and the scaling factor to be selected whereas such parameters in the claimed device are unknown to the user and are actually determined by the conversion equation (oral hearing).

In response to Appellant's arguments, the Examiner does not provide any arguments specifically related to claim 31 in the answer. We find the Examiner's only relevant argument in page 2 of the final rejection (paper No. 7, mailed August 18, 2000) stating that claim 31 is viewed merely as reciting "determining an input format and a desired output format." The Examiner

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further asserts that Donovan, similar to the claimed device, has plural input and output formats to be selected (id.).

A rejection for anticipation under section 102 requires that the four corners of a single prior art document describe every element of the claimed invention, either expressly or inherently, such that a person of ordinary skill in the art could practice the invention without undue experimentation. See Atlas Powder Co. v. Ireco Inc., 190 F.3d 1342, 1347, 51 USPQ2d 1943, 1947 (Fed. Cir. 1999); In re Paulsen, 30 F.3d 1475, 1478-79, 31 USPQ2d 1671, 1673 (Fed. Cir. 1994).

After a review of Donovan, we agree with Appellant's assertion that a controller determining a conversion equation from the determined input and output formats is absent in the reference. Donovan relates to scaling of computer video images to other known formats using conversion parameters of a VGA that are determined from a lookup table upon selection of the operation mode by a user (col. 9, lines 16-21). As depicted in figure 15, scan rate converter (SRC) controller 208 establishes control inputs 209 by accessing a set of parameters that are stored for each supported VGA mode in parameter table 204 (col. 9, lines 55-62). SRC controller 208 also passes the selected mode to the scan rate converter 206 which determines the

conversion parameters from the lookup table (col. 10, lines 15-31). Therefore, instead of the claimed determining a conversion equation from the determined input and output formats, Donovan determines the conversion parameters corresponding to a selected mode from a lookup table.

We find Appellant's distinction of the claimed conversion equation for determining the scaling factor from Donovan's lookup table in which the input and the scaling factor are known to the user, to be persuasive. As discussed above, the Examiner neither points to any specific portion of Donovan for disclosing the conversion equation, nor do we find the lookup table of Donovan to be similar to the claimed conversion equation. Accordingly, Donovan does not anticipate claim 31 and the rejection of independent claim 31 under 35 U.S.C. § 102 over Donovan cannot be sustained.

Turning to the rejection of claim 29, Appellant argues that the presence of a clock signal and a clock controller cannot be equated to the claimed second operation and control units (brief, pages 6 & 7). Appellant further asserts that Donovan's scan rate converter determines the signal parameters merely by performing a lookup into a parameter table which cannot be configured to perform an arithmetic equation or be used for determining a

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horizontal conversion operation (brief, page 7). We note that the Examiner does not challenge these arguments and instead, repeats the importance of timing control for providing "a continuously intelligible image in **any** image presentation system" (answer, pages 3 & 5).

A review of claim 29 confirms that the claim requires a vertical format converting unit and a horizontal format converting unit for receiving the output of the vertical format converting unit. The claim further recites a first operation unit for performing arithmetic operations as well as a first control unit for controlling the vertical conversion operation in the vertical format converting unit and a second operation unit and a second control unit in the horizontal format converting unit for controlling the horizontal conversion operation for converting the output of the vertical format converting unit. Therefore, the horizontal format converting unit actually receives and converts the output of the vertical converting unit into a horizontal format to be used in the conversion operation.

Based on our analysis of Donovan above, we agree with Appellant that Donovan performs the input conversion by merely using the signal parameters in a lookup table instead of performing an arithmetic operation and determining a format for

the vertical and horizontal conversion operations. We also find that Donovan does not provide separate format converting units for vertical and horizontal conversion operations, as recited in claim 29. Therefore, based on the Examiner's failure to establish a prima facie case of anticipation, we do not sustain the 35 U.S.C. § 102 rejection of claim 29 over Donovan.

Finally, with regard to claim 24, Appellant asserts that Donovan does not teach the claimed numerator and denominator generating units that obtain the output signal in response to the control signals (brief, page 7). Appellant further argues that the portions of the disclosure of Donovan in columns 11-14, which represent mathematical discussions of how to compute various parameters, include no discussion of the claimed numerator and denominator generating units (brief, page 8). The Examiner responds by asserting that Donovan's scaling ratios in the lookup tables require numerator and denominator factors and therefore, teach the claimed numerator and denominator generating units (answer, page 5).

Similar to our analysis of prior art above, we find that Donovan formats the output signal by merely using the signal parameters in a lookup table instead of determining a conversion equation determined by numerator and denominator generating

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units. We agree with Appellant's reading of Donovan related to computing image parameters without mentioning the claimed numerator and denominator generating units. Donovan, in fact, presents equations that are used in computing the signal parameters before such parameters are included in the lookup table. Thus, Donovan cannot anticipate claim 24 since the reference does not teach all the claimed limitations, specifically those related to units for generating numerator or denominator portions corresponding to the conversion equation. Because the Examiner has not established a prima facie case of anticipation, we cannot sustain the 35 U.S.C. § 102 rejection of independent claim 24, and claims 4 and 25-27 dependent therefrom, over Donovan.

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CONCLUSION

In view of the foregoing, the decision of the Examiner rejecting claims 4, 24-27, 29 and 31 under 35 U.S.C. § 102 is reversed.

REVERSED

Joseph F. Ruggiero
JOSEPH F. RUGGIERO
Administrative Patent Judge

LANCE LEONARD BARRY
Administrative Patent Judge

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